THE VETERINARY RECORD

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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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AN ANNIVERSARY.

Last Wednesday was the twenty-fifth anniversary of the granting of our Supplementary Charter of 1892. That measure remained our latest Charter till the granting of that of 1914. The latter was granted in the first month of the war—it bears date August 21; and war conditions have ever since rendered it largely inoperative—its most important clause has been wholly so. The 1892 Charter, on the other hand, has been in full operation for a quarter of a century, and its influence upon our professional development has been considerable. We may profitably consider what the effect has been.

Some of the comparatively minor clauses in the Charter have been very beneficial The system of Council election was improved, making the Council much more widely representative of the profession than before. The restriction of membership of the Council to Fellows of thr College was removed; and the quality of some past and several present Councilmen proves the wisdom of the change. Another step in the right direction was the abolition of the practice of allowing members of Council to act as examiners. But 'the collective good of these reforms is probably less than that of the establishment of the four years system, which was the main purpose of the Charter of 1892,

During the latter part of the period in which the three years' system was in force, a gallant attempt was made to bring the training of senior veterinary students up to a scientific equality with that of the medical schools. It failed, as it was bound to fail. The expansion of veterinary science necessitated the introduction of new teaching into the curriculum, for which the time then available was insufficient. The theory and practice of pathology, bacteriology, parasitology, medicine, surgery, materia medica, therapeutics, and hygiene had to be crowded into one college year of thirty weeks; and old students of the early nineties will remember the deplorable results. The schools could not teach everything that ought to have been taught; the students could not properly learn even everything that was taught. The four years system was necessary to allow time for the proper assimilation of the subjects then taught and make room for the addition of meat inspection and, a few years later, of protozoology. Thus the 1892 Charter did much more than improve the internal working of the profession; it initiated an extension in our educational system that had become absolutely indispensable for our development.

TREATMENT OF ECZEMA.

By HENRY GRAY, M.R.C.V.S.

I observe in your last issue that Mr. W. R. Davis attributes to me an agreement with an opinion expressed by Prof. Macqueen. Because I recommended abstention from greasy applications in the treatment of eczema of the scrotum and of the foot in the dog, he must not infer that I do not recommend them for other varieties, forms or localisations.

Would Mr. Davis use greasy applications in the treatment of peracute exudative eczema with a serous fœtid discharge, or dry and moist seborrhœic eczema with a black pigmentation of the skin?

One cannot treat every case of eczema alike because it varies in form, degree, and situation. Again, each individual animal has its own peculiarity, and what would suit a pigmented skin would in all probability be injurious to a pigmentless skin. Further, the success or failure of any treatment varies according to the skill adopted in carrying it out, to season, climatic conditions and locality. Finally, it also varies according to the breed and underlying constitutional peculiarities or structural changes.

Mr. Davis cites a case of a doctor with a cart load of thin putty, and also mentions Carron oil. Surely he does not wish us to believe that because these two agents are good for burns that human physicians treat all their cases of eczema with them?

Probably Mr. Davis has forgotten the pre-eminent value of picric acid, and the utility of a solution of washing soda in burns!

Why use the term "dermatitis," which is usually applied to an inflammation involving several or the whole layers of the skin *en masse*? Perhaps Mr. Davis uses it merely as a synonym of "skin disease." Beyond meaning "inflammation of the sktn" it does not designate any particular skin affection.

Pray let us have specific terms with precise, not ambiguous, meanings. When we obtain them we then know where we are. At present veterinary dermatology is, in this county, almost an unknown quantity.

[Put plainly, Mr. Davis asks why an oleaginous dressing should be held to be right for a skin damaged by heat, and an aqueous dressing to be preferable for similar conditions arising from other causes. The foregoing note does not answer this question; nor does it in any way help towards the solution of it.]

A RECORD IN TEMPERATURES.

Some surprises result from taking several thousand temperatures daily, and I have one to relate that I think breaks all records.

Not once or twice have I seen animals pass 107·6, but several times. To-day a case in a light draught horse was recorded as 108·4. This was reported at 4.20 p.m. At 4.45 a thoroughly reliable N.C.O. and another trustworthy person took this animal's temperature with two other thermometers, and found them to register 108.

This morning, at 6.15, the temperature had fallen to 100, and the horse went to exercise. I took it myself on his return and found it 100. At 2 p.m. it was 98·4. The animal had fed throughout, looked quite well, had a nearly normal pulse, respiration and membranes.

He had two doses of carbonate of ammonia when first discovered.

This animal will be kept under observation, and if anything developes I hope to report on his case another time. Meanwhile, as a "back number," I would be grateful for any explanation from my learned juniors who read *The Veterinary Record*.

H. Leeney, Capt. A.V.C. (T.F.)

RATS AND SWINE FEVER.

Mr. Blakeway's notes on Rats as carriers of Swine fever, in *The V.R.* of the 8th inst., opens up an old belief which cannot be allowed to pass without comment. It is not uncommon to hear it stated as a well-known fact, by both lay and professional men, that rats carry the disease; but this is simply an assertion which is difficult of proof.

On the other hand, the experiments carried out by Stockman (*vide* Final Report of the Departmental Committee on Swine Fever, 1915, Cd. 8045) point to the fact that rats do not often act as carriers, and further, that rats cannot act as pathological carriers of swine fever.

Presumably the method of spread suggested by Mr. Blakeway is as "mechanical carriers."

The possibility of swine fever being spread in this way cannot be overlooked, but the distance the disease can be carried must be comparatively small.

Years ago the rat as a carrier of swine fever was given a deal of publicity, and was under the consideration of the Board of Agriculture on several occasions, the suggestion being then made that the extermination of the rat would produce a considerable reduction in the number of outbreaks.

The opinion of all competent authorities is that great importance need not be attached to the rat as a mechanical carrier in the spread of swine fever.

The diseased and "carrier" pig still is, and always has been in Great Britain, the chief means of spread.

A surer method of reducing the number of outbreaks of swine fever has been suggested by J. Malcolm, Esq., F.R.C.V.S., and that is "for the Powers that be" to make it compulsory on all vendors of pigs to give a warranty with each pig that it is free from swine fever at the time of sale; the vendor being liable to the purchaser for compensation.

Of course, hardships would sometimes be incurred—what Act of Parliament or Order of a Government Department does not incur hardships? But it would do away with the cursory market inspection of the present time, and it would kill the traffic in the rough store pig—a very desirable and necessary achievement.

Sutton Coldfield, J. O. Powley.
Birmingham, 17 Aug.

Desiccated Anthrax Vaccine.

N. S. Ferry, Detroit, Michigan, in the *Journal of the American Veterinary Medical Association*, writes: "Pasteur's anthrax vaccine has been used, wherever anthrax has prevailed, since it was first brought to the attention of the veterinary profession, although it has long been known to be an exceedingly unstable and unreliable product. According to Washburn (Farmer's Bulletin, No. 784, United States Department of Agriculture), 'In the Pasteur method of vaccination there are, however, disadvantages which must be duly considered. To obtain satisfactory results from the use of Pasteur's vaccine it is of primary importance that the product be active. Experience has proved that this type of vaccine, if subjected to unfavourable conditions, may deteriorate within a short time after its preparation. Since the enactment of legislation giving the United States Department of Agriculture control of the manufacture of veterinary biological products going into interstate trade, periodical tests have been conducted with anthrax vaccine prepared by various manufacturers, and in many instances proved inert within three months of its preparation. In other cases it remained potent for a year. When exposed to warm temperature and light it deteriorates very rapidly, and when it is remembered that the products of manufacturers may be stored under unfavourable conditions in branch houses and rural drug stores, the loss of value can be readily explained.'

It seems to be requisite, for the successful vaccination of animals against anthrax, to artificially produce a slight attack of the disease. This procedure raises the resistance of the tissues of the animal sufficient to prevent the live virulent microorganisms from finding lodgment and thus producing the disease in the natural way. The organisms in Pasteur's vaccine do not remain, as a rule, in a sufficiently virulent condition to produce this artificial immunity, so that investigators, realising this fact, have endeavoured to devise other methods of preparing the antigen for vaccine purposes. The very fact that the anthrax bacillus is a spore-bearing organism very readily lends itself to the solution of the problem, as it is known that the spores at times retain their virulence for years under circumstances that would prove detrimental to organisms in the non-spore or vegetative stage, such as Pas-

teur's vaccine. Experiments have shown also that when the anthrax organism is acted upon by the proper amount of heat it gradually loses its virulence and, thus attenuated, will retain its modified strength in the spore stage. The method that is employed for this attenuation is that first proposed by Pasteur and used for his vaccine. A broth culture of the anthrax bacillus is allowed to grow under the influence of a temperature of 42·5° C. and, at varying intervals, is tested for virulence on rabbits, guinea-pigs and white mice. A suspension of the organism just virulent enough to kill a white mouse but not a guinea-pig is designated as vaccine No. 1, and one that will kill a guinea-pig but not a rabbit is vaccine No. 2. With this method of procedure it is a very simple matter to standardize a spore vaccine to any strength.

According to Eichhorn (Bulletin No. 340, United States Department of Agriculture), Zenkowsky in Russia, Detre in Hungary, Nitta in Japan, and others, have had successful results with spore vaccines, and for that reason, and also as a result of experiments carried on by the U.S. Bureau of Animal Industry, a spore vaccine has been proposed by them to replace, in this country, the Pasteur vaccine, using for the spore vaccine the same standardization tests as for Pasteur's vaccine.

In the preparation of this spore vaccine the following method is given by Eichhorn: 'For the purpose of producing a spore vaccine it is desirable to use a peptone-free agar medium, and after inoculation with the attenuated culture to grow the organism at a temperature 37·5° C. for four to seven days, by which time an abundance of spores will have formed. The growth is then washed from the slants and collected in a sterile flask and heated to a temperature of 60° C. for one-half hour, to destroy the vegetation forms of the organism. A measured quantity of this suspension can then be plated out in the usual manner and the spore control of 1 c.c. of the suspension be established.' He also says, 'In consideration of the keeping qualities of the spore vaccine, large lots can be prepared without fear of deterioration. In the bottling and storing of the same, proper care should be taken to prevent contamination.'

In preparing material of an antigenic nature, especially for vaccine purposes, experience has taught us that deterioration, due to light, heat, chemical action, autolysis, bacterial contamination and other conditions, is a factor with which one must constantly contend, and a factor best controlled by refrigeration. For therapeutic immunisation on a practical basis, however, refrigeration is out of the question, and desiccation has of late proven a satisfactory substitute.

While the spore vaccine in suspension used in Russia, Hungary and Japan, and advised in this country by Eichhorn and others, has a distinct advantage over Pasteur's vaccine, it also has its faults, and it is very evident that the ideal vaccine would be a spore vaccine in a desiccated form. This sort of a vaccine would embody all of the advantages of both the spore vaccine and Pasteur's vaccine. With this thought in mind experiments were undertaken by the author to determine, if possible, the practicability of a vaccine.

The desiccated spore vaccine in question was prepared in a similar manner to the spore vaccine in suspension, with the exception that the growth of the anthrax bacillus was scraped off the agar, incorporated with a sterile diluent in a proportion suitable to fulfill the tests required for its standardization, and dried at room temperature.

This vaccine was first tested in the early part of last year, and upon repeating the tests one year later with the same vaccine, which in the meantime had been kept at room temperature, it was found that there was no deterioration in virulence. This showed conclusively that it is not even necessary to keep the desiccated vaccine at refrigerator temperature as is advised for the ordinary spore vaccine in suspension.

There is also a question of vital importance to owners of cattle, especially when the animals are raised in large numbers, relative to the form in which the desiccated material is presented and the way in which it is to be administered. This is a distinctly practical question, and upon it rests in a large measure the usefulness of the vaccine. If it is made necessary to dissolve this dried vaccine in water before it can be injected, the method will have defeated its own purpose. To round up several hundred head of cattle, many of them in a wild state, with the intention of injecting them with a liquid vaccine by means of a syringe and a frail needle, is a difficult tosk. This is recognised as a great disadvantage to Pasteur's vaccine and the spore vaccine in liquid form, which is being used at present.

The spore vaccine should not only be desiccated, but is should be so prepared and standardised that it can be injected in a dry state in proper and safe proportions. This can readily be accomplished by moulding the dry spore vaccine into either the pellet or thread form, preferably the pellet, which insures the most convenient and the safest method for handling and injecting."

ABSTRACTS FROM FOREIGN JOURNALS.

The passage of the Rabies Virus through the Oculo-Conjunctival Mucous Membrane.

Different workers have obtained conflicting results as regards the passage of the rabies virus through the oculo-conjunctival mucous membrane. Galtier, Compte, and Nicolas obtained positive results; and Remlinger, Galbiati, Gargia, and Izkara negative ones. Babes is inclined to admit that the oculo-conjunctival mucous membrane which is sound in the most absolute sense of the word does not permit the passage of the rabies virus; but he recognises the difficulty that always exists in establishing the perfect integrity and freedom from lesions of the mucous membrane.

Luigi Sani, in the *Annales d'Igiene* of this year, reports some new experiments upon the question. For the purposes of the research, he has regarded

the mucous membrane as sound in which a careful examination failed to reveal any lesions.

Two series of experiments were performed; and in each series two lots each of 18 guinea-pigs were used. In the first series a concentrated emulsion of fixed virus, repeatedly controlled, was used. Two drops of this were placed upon the eyeballs of 18 guinea-pigs with sound mucous membranes, previously gently raising the lower eyelid and afterwards lightly massaging it. Two drops of the same emulsion were used for the other 18 guinea-pigs; but in these the mucous membrane was previously slightly injured with mouse-toothed forceps. In the second series of experiments a fixed virus of extreme activity for guinea-pigs, which had been developed by nine passages through the guinea-pig, was used. An emulsion of this was instilled into the eyes of two sets of guinea-pigs, as in the first series.

The result of the experiments was that in the second series two animals with sound mucous membranes and one with an injured one died of rabies, while all the others remained perfectly healthy. The deaths were demonstrated as due to rabies by clinical observation and by laboratory tests, which included the experimental inoculation of rabbits.

The author's conclusions may be summarised as follows. It is only possible to produce rabies by the passage of virus through the oculo-conjunctival mucous membrane when the virus used is one of exalted virulence for the species of animal used for the experiment. This form of experimental rabies may be produced both in animals with a macroscopically sound mucous membrane and in those with intentionally produced recent and bleeding lesions of the membrane. Positive results from the instillation of rabies virus into the oculo-conjunctival sac are, however, rare; and the instillation does not cause rabies when the virus used is not of maximum virulence for the species of animal concerned. The rarity of positive results in such experiments should be ascribed to the abundant lachrymation which always follows the instillation of the virus into the oculo-conjunctival sac, rather than to a true neutralisation of the virus *in situ*. Nevertheless, a neutralisation of virus absorbed in minimal quantities must be admitted, especially in the experiments made with injured mucous membranes; though lesions of the oculo-conjunctival mucous membrane are a factor of secondary importance in the genesis of experimental rabies.—(*La Clinica Veterinaria*).

Lumbar Anæsthesia in Veterinary Surgery.

Lichtenstern has been working upon this subject as applied to horses and cattle, with a view to avoiding the frequent accidents which are ascribed to the process in human surgery.

He uses a solution of from 2½ to 5% of novococaine, or of 10% stovaine. The 5% novococaine has a higher specific gravity than the cephalo-rachidian liquid. That of the 10% solution of stovaine is lighter; and this difference causes distinct conditions in the employment of the solutions, according to the point of penetration.

After the sub-arachnoidal injection of a 5% solution of novococaine in the lumbar region when the body is in the horizontal position, the diffusion of the fluid is effected as easily towards the head as towards the tail; but if the posterior third of the body is raised the solution is diffused more towards the head. The injection of a 10% solution of stovaine, on the contrary, anæsthetizes better in the direction of the brain. The employment of stovaine is indicated in operations upon the meso-gastric or gastric regions.

The action of both these agents is made more lasting by the addition of adrenalin. Lichtenstern states the doses of novococaine for the horse as 0·25 c.c. for foals up to one year old, and from 0·5 c.c. to 1 c.c. for animals over a year.

Lumbar anæsthesia can be practised with the animal either standing or cast. The most frequent course is to cast, retaining the body in the horizontal position, or raising its anterior or posterior third, according to the case. After regional preparation, the puncture is made with a trocar and canula from 11 to 13 centimetres long and from 10 to 16 millimetres thick. The point of puncture is between the last lumbar vertebra and the sacrum. In animals with a tough skin, this should be perforated previously, thus performing the operation by two punctures.

The trocar should be introduced some 11 centimetres. During the introduction the resistance offered by the dura mater is perceived; and the animal shows agitation at the moment of puncture. When the point of the trocar is supposed to have reached the sub-arachnoid space it is withdrawn, giving exit to a clear liquid, which shows that the injection may be proceeded with. The injection should be made very slowly, so as to occupy one or or two minutes.

Anæsthesia is produced after from five to fifteen minutes; early if large doses or very concentrated solutions are used. The motility of the hind limbs disappears much later.

Lichtenstern thinks that the puncture and the aseptic injection entail no danger, even if a lesion of the cord is produced, and believes that there are numerous indications for the procedure in veterinary surgery.

Torri, iu *Il Nuova Ercolani*, gives an account of rachidian anæsthesia by means of tropococaine, his experience of which largely resembles that of Lichtenstern with the other two agents. The technique of the procedure is extremely simple. Torri operates with the animal standing, binding the hind limbs and putting a twitch on the nose. The point for injection is easily found in thin animals; in the horse, it is situated at the point of union of the median line with an imaginary line uniting the internal iliac angles.

After preparing the skin, the trocar is introduced gradually. The lumbo-sacral ligament and the meninges are perforated; and the cephalo-rachidian liquid, yellowish in tint and mixed with some drops of blood, issues from the canula when the trocar is withdrawn. When the arachnoid has been perforated, a sensation of resistance having been overcome and an empty space beyond the trocar is

noticed; and, if the point is then pushed further, painful reflexes are caused.

The injection is performed slowly, and when it is terminated the animal is set free. The first analgesic phenomena are seen from 3 to 30 minutes after the injection, according to the dose used; uncertainty of the movements of the hind limbs is noticed, and paresis afterwards appears. Section of nerves may then be performed without causing the least pain; the zone of analgesia extends anteriorly as far as the diaphragm, and sometimes for a short time as far as the axillary region. The alkaloid is employed as a 10% solution, in distilled water to which 6% of sodium chloride has been added. Torri concludes that rachidian anasthesia by tropococaine is simple, practical, and economical in its application. Sub-arachnoidal injections of tropococaine are not toxic, and may be employed without fear. All the domestic animals are sensitive, constantly and in the same degree, to the action of this alkaloid. Anæsthesia is produced 3 to 10 minutes after the injection, and extends as far as the diaphragm, and lasts from an hour and a half to two hours. It produces no subsequent troubles.—(*Revista de Veterinaria Militar*). W. R. C.

THE VETERINARY CORPS, U.S.A. ARMY.

Many of our readers will remember that Veterinarians attached to U.S.A. Army, with the help of their *confrères* in civil practice, have been endeavouring for years past to obtain due recognition from their War Department, and a status equivalent to that held in our Army. The question came to the front at the time of the Allied intervention in the Chinese rebellion. The following extract is from the May number of the Journal of the American Veterinary Association, and shows that the profession in the States has attained some of its objects, and is steadily progressing, helped by the European upheaval.

"In accordance with the Act of June 3, 1916 establishing a Veterinary Corps for the Army, those in the service have recently received their commissions. It is the plan of the War Department at present to hold an examination for applicants for the Army Veterinary Corps in the early part of July (1917). Upon a declaration of war an examination can be called at any time. Persons eligible for candidates for the regular Army Veterinary Corps are native-born citizens, between the age of 21 and 27 years. They will be required to pass a satisfactory examination as to character, physical condition, general education and professional qualifications. The men already in the Army Veterinary Service will form a nucleus for an organisation. In case of emergency, as appears possible at the present time, it will no doubt be necessary to enlist the services of veterinarians in civil life beyond the age limit, and those who have demonstrated their ability to do work and are more than 27 years of age. It will not be possible, therefore, for them to enter the regular Army service. The special committee on Army Veterinary Service has just learned with much surprise and embarrassment that there is no provision made in the Act of June 3, 1916, for a Reserve Veterinary Corps. A provision was made for reserve veterinarians. They would receive the pay and allowance of a second lieutenant, but no rank. They must be graduated from a recognised veterinary college or university, and must pass a satisfactory examination as to physical condition, general education, professional qualifications, etc.

On March 2, 1917, a bill known as Senate Bill 8329 was introduced by Senator Watson which provides for plans for army re-organisation. It is understood that this plan is backed by the War College, and while it did not pass the 64th Congress a similar provision will be introduced in the Special Session. The following are the provisions made in it for the Veterinary Service:—

Sec. 17. THE MEDICAL DEPARTMENT.—The Medical Department shall consist of one Surgeon-General, who shall be a permanent officer with the rank of major-general during the active service of the present incumbent of that office, and thereafter with the rank of brigadier-general, who shall be chief of said department; a Medical Corps; a Medical Reserve Corps within the limit of time now fixed by law; a Dental Corps; a Veterinary Corps; contract surgeons, as now authorised by law; the Nurse Corps, as now prescribed by law; an enlisted personnel and a temporary personnel.

There shall be three hundred and forty-eight veterinarians and assistant veterinarians for duty with the over-sea garrisons, the frontier forces, and the training forces, at the rate of two such officers for each regiment of Cavalry, one for every three batteries of Field Artillery, and one for each battalion of mounted Engineers and for duty with the Quartermaster Corps as inspectors of horses, mules, and meats; and the President is hereby authorised, by and with the advice and consent of the Senate, to appoint the additional number of assistant veterinarians authorised.

Candidates for appointment as assistant veterinarians shall have the qualifications and shall pass the examinations now provided for by law, with reference to rank, pay, and allowances; and the President is authorised to appoint such number of reserve veterinarians as may be required to attend public animals pertaining to the Quartermaster Corps as now prescribed by law."

It will be seen by this section that there are still no plans for a Veterinary Reserve Corps, It is proposed to amend this section as follows;—"For the purpose of securing a Reserve Corps of Veterinary officers for military service as temporary officers in the regular Army, the President is authorised to issue commissions to citizens of the United States who are graduates from a reputable veterinary school under such restrictions and with the same rank as is given to officers of the Medical Reserve Corps."

We should make every effort to induce our young men to enter the regular Army Veterinary Corps and try to build up a representative army veterinary

service. For the present emergency we should endeavour to provide a strong Veterinary Reserve Corps made up of the best men in the profession.

There is much work for us to do. The Federal Bureau of Animal Industry and those having charge of animal industries in the various States should do everything possible to conserve our animals and animal products and encourage animal husbandry. On account of the high prices of meat, leather, and all animal products, there is a great tendency on the part of farmers to dispose of their animals, which can only result in a shortage in the future and this shortage will be most felt when they are most needed. The best men in the veterinary profession can render a very valuable service to the country by assisting in purchasing animals, inspecting meat, controlling diseases of animals in the army and civil life and looking after wounded and sick horses in war. Unless Congress can be persuaded to provide for an Army Veterinary Reserve Corps, the veterinarians above the age limit in civil life who desire to serve their country in case of war had better join the infantry, artillery, or some other branch of the service.

C. J. M.

SOUTHERN RHODESIA.

ABRIDGED REPORT OF THE DIRECTOR OF AGRICULTURE FOR THE YEAR 1916. [Extracts.]

The number of farms under actual beneficial occupation is 2178, as against 2145 last year, and 2042 in the year before.

The statistical returns regarding live stock and crops show that the country, in spite of war conditions, is progressing steadily, and that those farmers who have been unable to proceed to the front have at any rate kept up production and maintained our herds and flocks, our acres and orchards in an active, thriving state. The following figures indicate the area under European cultivation in Southern Rhodesia :—

Season	Under crops	Season	Under crops
1913-14	Acres 161,268	1916-17	Acres 254,702

The figures for live stock for the year show notable increases :—

	Cattle	Sheep	Goats
European owned (increase)	73648	12149	3671
Native owned „	45452	33403	31388

The position of the cattle industry, in spite of a few drawbacks, is thoroughly sound and satisfactory. Numbers increase steadily, and mortality is, as compared to other countries, very low. The net increase has been high, in spite of a new and satisfactory cause of diminution in the form of export of slaughter stock.

An event of considerable importance during the year was the opening up of Johannesburg as an outlet for fat stock from Matabeleland. Much use has been made of this, to the evident advantage of farmers in the south and west. The number of cattle so exported during the year was 12,719, valued at £112,003.

The practice of dipping, which has been a notable feature of recent years, has made more progress than ever before. For the last three years the number of dipping tanks was respectively 427, 595, and is now 761, whilst many are in course of erection. The natives, who still own a majority of the cattle in the country, show a remarkable willingness to adopt the practice of universal dipping, and have, with the encouragement of the Native Department, combined to erect numerous tanks, included in the above returns, in their reserves.

Veterinary research continues, and although much time is devoted to microscopic diagnosis and other laboratory work of a routine nature, progress can be reported, especially in the investigation of horse sickness and the inoculation of imported cattle. During the year provision was made for the commencement of the erection of much needed new veterinary research laboratories and a site selected, and it is hoped that construction may shortly commence.

The only experiments with live stock possible under existing conditions were the stall feeding of bullocks, and these were successfully carried out, 32 head being fattened off. Great interest is shown in these experiments, which are most timely in view of the growing practice of stall feeding for the butcher. The herd of breeding cattle consists now of some 48 Frieslands, having trebled its numbers in six years, and bulls are sold to farmers from time to time. The work of a stud farm is, therefore, in actual operation, though on much too small a scale to be effective, and with a breed which, however useful in itself for dairy purposes, cannot be regarded as being in much demand or popular in the country. The cattle have, however, done exceptionally well.

Further knowledge is being steadily acquired regarding a great variety of entomological matters, notably last year the distribution of tsetse fly, the habits and the means of destroying various cutworms, chafers, wireworm, surface beetles and kindred pests.

ABRIDGED REPORT OF THE CHIEF VETERINARY SURGEON. [Extracts.]

African Coast Fever. The year was marked by the appearance of coast fever in the Mrewa district, in which it had not at any time previously existed, and its re-appearance in Gwelo district after over ten years' freedom therefrom. In neither case have we been able to trace the source of infection or the means by which it was conveyed. The nearest existing centres of infection to the Mrewa outbreak were about 60 miles distant, in Salisbury district; and in the case of the Hunter's Road outbreak the nearest infected area is about 130 miles.

During the last week of May two beasts died on the farm Riverbend, in the northern section of Gwelo district. The carcases were rather too decomposed to permit of a satisfactory examination, but spleen and blood preparations examined microscopically left little doubt of the existence of coast fever. As the district had been free from this disease for over ten years, and as no infection was known to exist within a radius of at least 130 miles, careful observations were undertaken to verify the diagnosis, and within a few weeks the disease was demonstrated in several animals. The following month the disease was discovered on the adjoining farm Cross Roads. The infected farms were fenced and compulsory dipping enforced in a large area around them, and so far there has been no suspicion of the existence of infection elsewhere in the district.

Direct transmission by cattle seems impossible, in view of the control exercised at all infected centres; indirect transmission, as by clothing, blankets, grass, etc., however improbable, is not impossible, nor is the malicious dissemination of infected ticks. Notwithstanding these outbreaks in previously clean districts, the position generally shows a marked improvement compared with the previous year. There were fewer fresh outbreaks—20, as against 35—and a greatly decreased mortality—382 head, as against 1,174. Of the 38 centres on which disease occurred during 1915, only 15 showed infection during 1916.

Black Quarter. Shortly after the heavy rains which fell in the Bulalima-Mangwe district in November, several outbreaks of black quarter occurred. The

mortality was somewhat heavy. It was reported that animals of all ages contracted the disease and that a number recovered. The heavy rains after several years of drought were probably the determining influence in the infection. Since the occupation, the existence of infection has been recorded on two occasions only. It is not unlikely that it is more widely distributed than our observations in the past would appear to show. A number of deaths are reported every year as the result of snake bite, of which probably a large proportion are really due to black quarter.

Tuberculosis. In a herd in the Umtali district an aged cow was destroyed as suspected of tuberculosis. Post-mortem and microscopic examinations confirmed the diagnosis. All in contact animals—56 head—were tested with tuberculin, of which 8 re-acted. Amongst the 12,719 head of slaughter cattle exported to the Johannesburg abattoirs, 5 cases of tuberculosis were discovered.

Contagious Abortion. A few fresh centres of infection were discovered during the year in the Salisbury and Mazoe districts. The present imperfect state of our knowledge of this disease and the conditions under which cattle are raised and managed in this country render it difficult to suggest measures for the eradication of infection or preventing its spread. A few of the infected herds have been inoculated with massive doses of dead bacilli. Although this process is alleged by certain authorities to be useless, the results appear to be favourable, but whether they are due to the treatment or other factors one cannot say. The recent investigations in immunisation with live cultures of the bacilli which have been carried out in England are most encouraging, but if such process is ultimately established as a satisfactory means of dealing with the disease, its application in this country would be impossible except in young heifers, and even then we should required to be assured that there was no possibility of animals immunised in this way becoming disseminators of infection.

Equine Influenza. An outbreak of this disease occurred in Buluwayo and adjoining districts during September. Fully 90 per cent. of horses, many mules and donkeys were affected. A slight mortality occurred amongst donkeys and mules, but none in horses.

J. M. SINCLAIR,
2nd April. Chief Veterinary Surgeon.

The Basle Anatomical Nomenclature (B.N.A.)

The following sentences are from a long letter to *The Brit: Med: Jrnl:* by Prof. ARTHUR KEITH:—

"In 1889 a Commission was appointed by the Anatomische Gesellschaft. After six years of effective labour the Commission submitted to the German Anatomical Society, when it met in Basle in the early summer of 1895, a new nomenclature, which was adopted by the Society and named the B.N.A.—*Basle Nomina Anatomica.* The members of the Society received it without demur; it was primarily intended to secure uniformity in German schools; there was no intention of dictating to the rest of the world."

". . . . That is the first point we have to remember. The nomenclature (B.N.A.) which is now being pressed on us was designed not for us but for the needs of German schools. . . . . In short, the B.N.A. was founded on the usage in German schools, and no attempt was made to bring the new nomenclature into harmony with the usages in France, Italy, Russia, or English-speaking countries."

"How does it come about that a scheme of names compiled under the circumstances just narrated, is being forced on English-speaking medical men? To obtain an insight to the commencement of the movement we must turn to the introduction which Prof. Llewellys F. Barker, Sir William Osler's successor in the Chair of Medicine at Johns Hopkins University, wrote to a work which he published in 1907, and entitled *Anatomical Terminology.*

'Now that the N.B.A. is being followed in medical and scientific schools throughout the world,' he wrote, 'and has been adopted as the language used in several newer English and American anatomical text-books and atlases, it has occurred to the publishers of Morris's *Anatomy* that a concise statement concerning the origin and exact nature of this list of anatomical terms would be interesting and helpful to anatomists, physiologists, biologists, pathologists, and clinicians.'

Now I can assert without fear of contradiction that, in the year 1907, there was not a single anatomical school or teaching hospital throughout the whole length and breadth of Great Britain and Ireland in which the B.N.A. had been adopted; there was not a school in which there was any wish to adopt the new nomenclature *en bloc.* But it did occur to the publishers of an excellent and deservedly successful text-book on anatomy to adopt the new nomenclature. What have publishers to do with the terminologies to be used by medical men? Publishers make commercial adventures, and in making such adventures we cannot blame them if they exploit, as milliners do, the calls of fashion. If the new fashion 'catches on' old wares go out of date and become unsaleable. It was under the ægis of publishers that the German terminology—which we politely name the B.N.A.—was introduced to English-speaking schools. There always has been, and always will be, in every class a very considerable section which is susceptible to fashion, and mistakes movement in a circle for real progress. It is that section which has capitulated to the new nomenclature—as the publishing trade hoped it would."

"In this country we had reached an approximate state of uniformity as regards the use of anatomical terms—as near the ideal as we are ever likely to attain. No one regarded the nomenclature as an ideal one, but it was believed to be worth while to submit to its imperfections in order to retain uniformity. But now that uniformity is gone the time has come for every medical man, be he teacher or pupil, to use his best judgement at the present juncture of affairs. Three courses are open to us: (1) to accept the B.N.A., with all its defects, as the standard English nomenclature; that course will not be adopted in either France or Italy. (2) To retain our present nomenclature, with all its disadvantages. It is based on the system which prevails in France and Italy. (3) To accept such terms from the B.N.A. as are manifestly more apt than those we now employ.

It is the third course which I would press now on the attention of medical men. Its advocates speak of the B.N.A. as if it were a decalogue to be obeyed in its entirety; it never seems to have occurred either to Prof. Barker or Dr. Jamieson that it was possible to accept the good and leave the bad. That, however, is what one hopes may happen."

"Medical men must insist on a freedom of choice. At the very least we must keep in mind and be influenced by the usages and needs of France, Italy, America, Russia, Holland, Denmark, Norway, and Sweden, as well as by those of Germany and Austria.

I do not propose now to enter into an analysis of the merits and demerits of the Basle nomenclature. All that I would request in the meantime is that medical men should remember that English-speaking anatomists are heirs to a goodly heritage; in no country has anatomy been exploited by the practical man more than in our country, and our nomenclature has been shaped for our practical needs more than in Germany. My aim is gained if I have made physicians and surgeons realise the nature of the movement which threatens to over-

whelm the system which they learnt in their college days. They must not think, when students and young medical men speak to them of the internal lateral as the tibial collateral ligament of the knee-joint, or the internal lateral as the ulnar collateral of the elbow-joint, or the auricle of the heart as the atrium, or the base of the bladder as its fundus, that they themselves are out of date; they should regret that such a student should be suffering from the wrong headed zeal of teachers who are willing to sacrifice the living spirit of English anatomy for the Dead Sea fruit of a foreign terminology.

Royal College of Surgeons of England, London, W.C.
July 18th.

ARMY VETERINARY SERVICE

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 17.

The King has been pleased to approve of the following Rewards for distingnished services in the field :—

DISTINGUISHED SERVICE ORDER.

* * * *

Capt. (Actg. Maj.) Edward George Turner, A.V.C.

The names of the following have been brought to the notice of the Secretary of State for War for valuable services rendered in connexion with military operations in the Field :—

EGYPTIAN ARMY.

* * * *

El Yuzbashi (Capt.) Súliman Effendi Izzat, Vet. Corps.
Narfar (Pte.) Mohammed Yusif Ali Yusif, 277, Vet. Corps.

War Office, Sept. 14.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. hon. Capts. :—W. F. Armstrong, E. C. Winter, J. Gregg, J. Brown, J. D. Knowles, E. A. Ryan, P. R. Thompson, T. A. Connolly (Sept. 15).

To be temp. Lieut. :—R. Gorman (Aug. 24).

Sept. 15.

To be temp. Lieut. :—F. McD. McKenzie (Aug. 26).

Sept. 18.

Capt. (temp. Maj.) W. H. Simpson to be actg. Lt.-Col. (Aug. 30).

Sept. 20.

Temp. Lt. to be temp. Capt. :—J. B. Russell (Sept. 5).

CANADIAN A.V.C.

Sept. 18.

Temp. Capt. W. G. Stedman to be temp. Maj. whilst empld. as A.D.V.S., *vice* Lt.-Col. H. D. Smith (Apl. 27).

TERRITORIAL FORCE, ARMY VETERINARY CORPS.

Sept. 18.

Capt. (temp. Maj.) W. L. Harrison, F.R.C.V.S., to be Maj. (July 17).

The following casualty is reported :—

DIED—Pte. J. W. Anderson, 24699 (Leeds).

ANTHRAX BACILLI IN SUGAR.—Reuter's agency learns that Swedish papers that have reached France announce the discovery at Karuna, in the north of Sweden, of sugar containing anthrax bacilli. The authorities believe this sugar belonged to three Finns expelled from Sweden last April, and who, during court proceedings, declared they were in the Finnish battalion, and had come direct from Germany. They intended proceeding to Russia, but were stopped at the frontier. After their arrest at Karuna, the box containing this infected sugar was found.—*Eastern Morning News.*

TETANUS BACILLI—Mr. W. B. Smith, Federal chemist, Kansas, recently reported that court plaster which is being sold throughout the State is full of tetanus bacilli. This report led to the arrest of five Germans. Samples of the plaster are being examined by the United States Department of Justice.—*B.M.J.*

TREATMENT OF ECZEMA.

Dear Sir,—I quite agree with Mr. W. R. Davis' remarks in *The Record* of Sept. 15th, which coincide with my own practical experience of over twenty years. Now cracked heels in horses is Acute Dermatitis, and in some cases difficult to cure, even requiring actual cautery to heal the lesion and remove the lameness. Again, for example, rope galls in army horses, due to being "picketed out." What better dressing is there than Liq. plumbi subacetas, olive oil, with, if any tendency to septic infection, the addition of Acid carbolic as germicidal and sedative to skin, which I

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Out-breaks.	Slaugh-tered.
IR LAND. Week ended Sept. 8		...	...	...	...	...	...	Outbreaks 2		5	3	10
Corresponding Week in	1916 ...	...	...	...	...	...	...	4		14	6	21
	1915 ...	...	...	...	...	...	...	1		6	6	5
	1914 ...	...	...	...	...	...	...	2		2	1	6
Total for 36 weeks, 1917	...	3	5	...	...	1	1	39		276	182	1070
Corresponding period in	1916 ...	3	7	...	...	...	...	52		292	230	1306
	1915 ...	1	1	...	...	1	3	54		296	181	1005
	1914 ...	1	1	76	957	...	...	64		392	159	825

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 10, 1917

NOTE.—The figures for the Current Year are approximate only. † As Diseased or Exposed to Infection

have used in a number of cases treated with success, with a protective bandage applied to complete recovery.

I am now treating a case of canker in the horse, all four feet affected, with Mr. Davis' Canker foot-dressing, and up to date of writing I quite anticipate ultimate recovery. I am personally applying the dressing to give it a fair chance.

Folkestone. HENRY B. EVE, M.R.C.V.S.

FOREIGN BODY IN THE HORSE.

Dear Sir,—In your issue of July 14th, received to-day, I note the case of a foreign body being found in a horse by Capt. W. T. Olver, A.V.C., and his theory as to how it came there. The "ten cent cure" is well known amongst the old-time farmers of Canada for the cure of "shoulder sweeny," and I have seen some remarkable results from its use. A slit is made in the skin horizontally, the skin below is then loosened from the flesh to make a small pouch, into which a clean ten cent piece is dropped, the horse being then turned out to pasture. Occasionally the coin is lost sight of, and may remain in the animal's body till death without its presence being suspected, unless it is noticed as in the case cited by Capt. Olver.

I would be very interested to know if Capt. Olver noticed if the animal in question showed any signs of having suffered from muscular atrophy?—Yours truly,

Harris, Sask., Canada. HARRY HILL.
Aug. 11, 1917.

Prolongation of immunity against Tetanus.

Vallei and Bezan (*C. R. de l'Acad. des Sciences*, June 25th, 1917) draw attention to the short duration of passive immunity given by antitetanic serum and to the need for devising a method for prolonging immunisation. The method they propose is to immunise by means of tetanus toxin attenuated by iodine, according to Roux's plan. A toxin lethal to guinea-pigs in the strength of one hundred-thousandth of a cubic centimetre to 2·50 grams of body-weight was used, and the iodine solution consisted of one grain of iodine and two grains of potassium iodide in 200 c.cm. of water. Seven black wounded soldiers were treated by injections of the toxin-iodine mixture at intervals of five days. The first injection was 1 c.cm. of a two-thirds toxin and one-third iodine solution; the second injection was 2 c.cm. of the same solution; the third injection was 5 c.cm of a three-fifths toxin and two-fifths iodine solution. Seven rabbits were treated with the same doses at the same intervals. After ten days the rabbits resisted a 2000 minimal lethal dose of toxin. Another batch of rabbits treated with one-third of these doses resisted a 200 minimal lethal dose at the end of ten days. The authors point out that for primary injection reliance should be placed on antitoxin, as the immunity from vaccine does not reach its maximum until after ten days. It will be necessary to determine the relative duration of immunity following repeated vaccinations. If the period of immunity proves satisfactory this method should overcome the grave inconveniences of serum rash and serum sickness. Other observers have obtained satisfactory results in the immunisation of horses upon the same plan.—*Brit: Med: Jrnl*:

Pig dealing and Swine Fever.

The store pig trade is an impracticable and unprofitable nuisance—for nothing connected with the industry has done so much to ruin it.

Whereas we are able to breed all the pigs we require for our bacon and hams without going to Denmark or the United States for a single pound, we have permitted the growth of a system of dealing—buying and selling—which accounts more than all other causes for the spread of swine fever, and the consequent determination of thousands of men to have nothing to do with breeding and feeding.

Pig breeding well pays the man who feeds his own stock, but it does not sufficiently pay those who breed and sell for others to fatten, or those who buy for this purpose from the breeder or the dealer. Dealing is a legitimate business, but it is not desirable in the interests of the country. So long as swine fever exists there should be neither dealers nor markets. If a man must sell his young stores he should do so through some other channel, and follow the example of the poultry breeder and advertise, and so with the buyer. There would be little difficulty among farmers who meet at weekly markets, and can easily learn from each other where pigs are on sale, or where there are buyers. One fact is undeniable, the pig will not bear two respectable profits, certainly not that of the dealer as well, and the sooner the breeder recognises that by feeding his own pigs he will gain the profit which the buyer of stores expects, the better it will be for himself. And so with the feeder of purchased pigs. He must be well aware that the breeder would not be willing to sell at a loss, and that the profit he takes ought to belong to him if he took the trouble to breed as well as to feed.

Without careful accounts there can be no accurate knowledge of how much is gained, or whether there has been a gain or a loss. In the first place no breeder can know the cost price of his weaners, or stores of greater age, unless he knows what it has cost him to feed their sow. He ought to ascertain precisely what food she consumes, and its cost, from the date on which her last litter was weaned. The cost of feeding the sow from weaning until she litters again, together with the cost of the food consumed by herself and her pigs, until they are weaned, constitutes the just charge on the litter, and this, with the addition of charges for interest on the capital invested, should be the basis of valuation in pricing the pigs and, therefore, in estimating the profit gained. If a sow costs 2s. 6d. a week for a period of four months after weaning, and an average of 7s. a week from farrowing until weaning again, there will be a charge against the pigs of five guineas under normal conditions. If the youngsters number ten, and sell at an average price of 25s., they will pay handsomely, making every allowance for other expenses. Under present conditions figures have changed, the cost of food being quite as abnormal as the cost of pigs and their produce, but even now the profit should be quite as large in a well managed piggery as in the days before the war.

CARELESS BREEDING.

One reason why profits of breeder and feeder are smaller than they ought to be at all times, is that there is so little care taken in the selection of breeding stock. Sows used are small, weedy, and wanting in vitality and prolificacy, a condition which is emphasised by their confinement to sties with small courts, and their general lack of freedom, exercise, and green food. Sows are moreover mated in a general way with most imperfect and underbred boars, although many of these are undoubtedly pure.

Instead of first looking for a written pedigree with a boar, a breeder of pigs should look to the pig and see that his pedigree is warranted by his appears. Pedigree is of no value whatever in connection with an imperfect specimen, whether boar or sow, but a good looking specimen is all the better for pedigree because it proves that his appearance is not an accident, but has been perpetuated by careful breening.

CARELESS FEEDING.

Another cause of failure is careless or indifferent feeding. Many persons who feed in a small way, pay almost double as much for their food as they ought to do by purchasing in small quantities of small dealers.

The price of maize and barley in Mark Lane is often one half, or nearly one half less than the cost of the gallon or peck of a local dealer, who lives upon the small sales he makes to people who are unable to buy by the sack or the ton.

Wrong food, too, is often supplied to pigs, a barley of very inferior quality is a well known example. The craze for sty-feeding, and the fact that so many keep pigs who have no other means of housing them—and no opportunity of giving them liberty, has induced pig-keepers in general to provide concentrated foods in all forms. The small breeder or feeder is compelled to use such foods, having no recourse to a pasture, and few opportunities of obtaining green forage, mangels, sweeds, carrots, or parsnips, all of which are of great value in the maintenance of a sow at very little cost, where they are grown on a holding, as in providing part of the ration of a fatting pig. Barley crushed by the feeder himself from a good sample, is a cheaper and better food than average barley meal; sharps are cheaper still, and these foods with crushed maize and some roots will effect all that is needed.—J. L., in *Home and Farm.*

Swine Fever.—Charge of exposing diseased animals dismissed.

At Colchester, on Friday afternoon, 14th inst., before Mr. R. B. Beard (in the chair) and Alderman E. A. Blaxill, Alexander K. Barlow, Wivenhoe Hall, was summoned for exposing eighteen diseased or suspected pigs in the market. The Town Clerk prosecuted, and Mr. H. W. Jones defended, and pleaded not guilty.

The Town Clerk said he did not wish to unduly press the case. The Veterinary Inspector (Mr. Rowland Taylor) was on duty in the Cattle Market on July 28th, when he saw 18 pigs—16 being in two pens and two others in another pen a few yards away. He examined them and found that the two had swine fever. The affected pigs were killed and the other sixteen were inoculated.

Mr. Jones: I have kept pigs for years, and have only called the veterinary surgeon in once, and then he said the only thing the matter with the pigs was that they were hopelessly drunk; someone having given them sloe gin. (Loud laughter).

Police Inspector Wynne, Mr. David Graigie, Inspector of the Board of Agriculture, who agreed that no living man could tell if a pig had swine fever without a post-mortem, and P.-s. Pryke, County Police, who said that when asked why he had not reported the illness of the pigs, the defendant said he was unaware that anything was the matter with them, gave evidence for the prosecution.

Mr. Jones said Mr. Barlow was not an expert with regard to pigs, and he knew nothing about them having swine fever. There was nothing to give him the slightest suspicion that the pigs were affected.

Evidence supporting that statement was given by Mr. Barlow, David Hughes, and George Joyce, employes of the defendant, and Mr. W. T. Rainbird, of the firm of Stanford and Co., auctioneers.

The Magistrates, after retiring, found that Mr. Barlow had no knowledge of the swine fever, and under Section 57 they dismissed the case. The Chairman added that they had no doubt that the pigs were suffering from swine fever, as the Board of Agriculture certificate certified.—*East Anglian Daily Times.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
		Outbreaks (a)	Animals.	Outbreaks (a)	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	(b)	Outbreaks (a)	Slaughtered. *
GT. BRITAIN. Week ended Sept. 15		5	5			1	1	15	24	4	15	8
Corresponding week in	1916 ...	6	6			2	5	16	28		62	55
	1915 ...	9	10			1	2	8	25		39	97
	1914 ...	13	14	2	6	3	8	4	4		78	732
Total for 37 weeks, 1917		338	396			20	34	1922	3710	399	1755	762
Corresponding period in	1916 ...	385	455	1	24	38	96	1731	3892	185	3425	8716
	1915 ...	433	494			38	68	605	1311	160	3093	13703
	1914 ...	538	588	22	108	78	231	1526	2638	155	2260	30000

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:—Essex 1
Board of Agriculture and Fisheries, Sept. 18, 1917 Excluding outbreaks in army horses.

IRELAND. Week ended Sept. 15		...	...	...	...	...	...	Outbreaks ...	5	3	6
Corresponding Week in	1916 ...	...	...	...	...	...	...	2	9	4	52
	1915 ...	...	...	...	...	...	...	2	9	5	32
	1914 ...	...	...	...	...	...	...	1	5	1	11
Total for 37 weeks, 1917 ...		3	5	...	...	1	1	39	281	185	1076
Corresponding period in	1916 ...	3	7	...	...	...	...	54	301	234	1358
	1915 ...	1	1	...	...	1	3	56	505	186	1037
	1914 ...	1	1	76	957	...	...	65	397	160	836

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 17, 1917.
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection